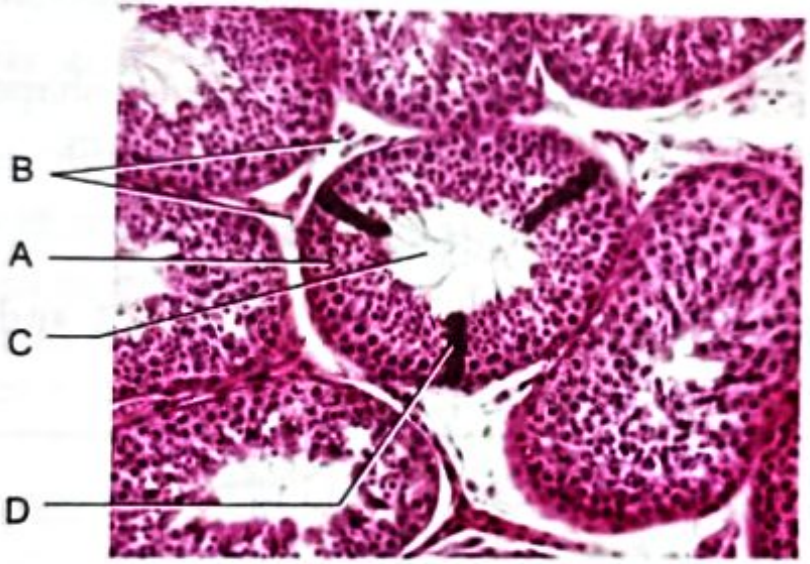
Study the figures given below and answer the questions that follow.



(*i*) During reproduction, the chromosome number (2n) reduces to half (n) in the gametes and again resume the original number (2n) in the offspring, what are the processes through which these events take place?

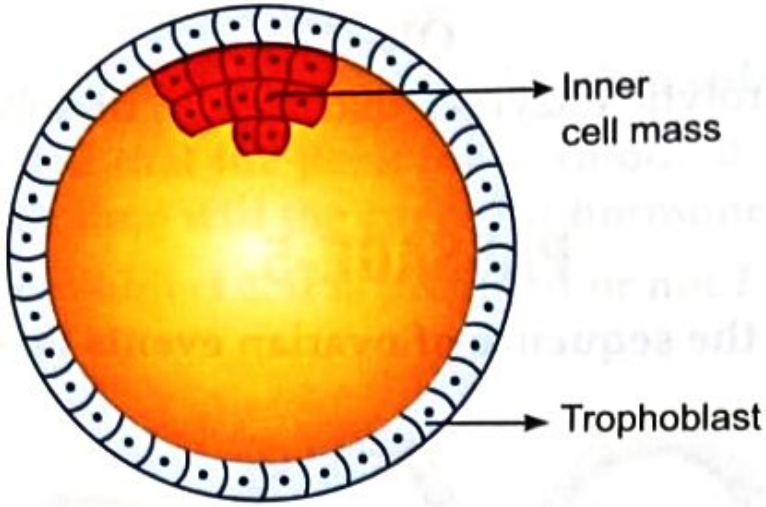
(*ii*) Write the functions of A and D.

(*iii*) Mention the function of mitochondria in sperm.

OR

Mention the function of acrosome is sperm.

Study the figure given below and answer the questions that follow:



(*i*) Name the stage of human embryo the figure represents.

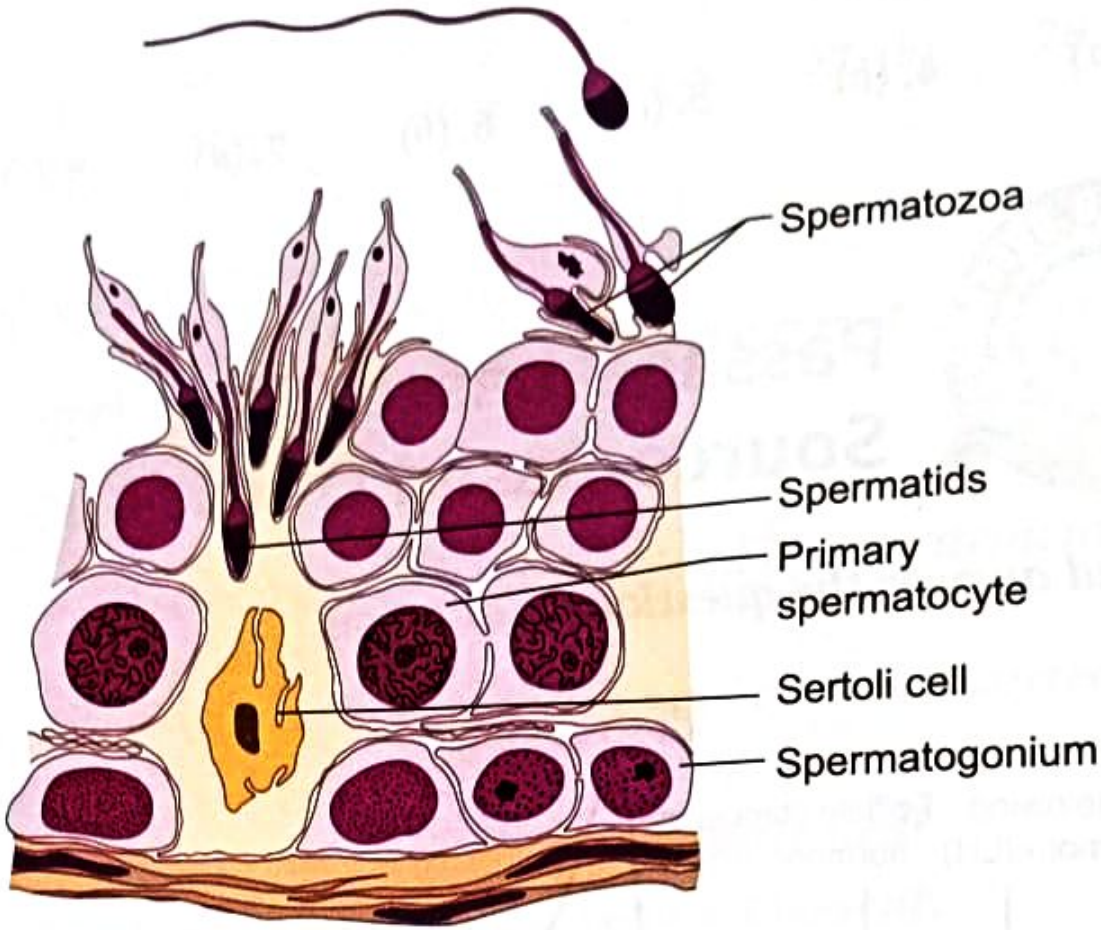
(*ii*) Mention the fate of the inner cell mass after implantation in the uterus.

(*iii*) Where are the stem cells located in this embryo?

OR

Mention the fate of the trophoplast during embryonic development?

Study the figure given below:



(*i*) **Pick out and name the cells that undergo spermiogenesis.**

(*ii*) **Differentiate between spermiogenesis and spermiation?**

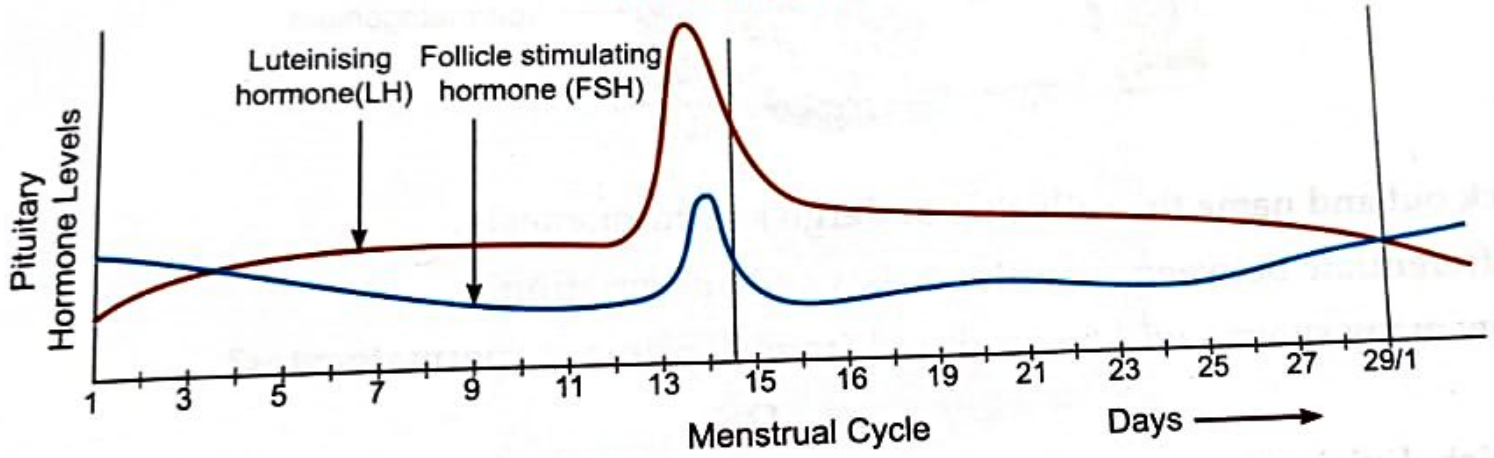
(*iii*) **How many sperms will be produced from 50 primary spermatocytes?**

OR

Which division is responsible for the generation of primary spermatocytes?

Read the given passages and answer the questions that follow.

PASSAGE-1



(*i*) **What is the importance of LH surge?**

(*ii*) **Identify the ovarian phases during the menstrual cycle.**

(*a*) **5th day to 12th day of the cycle.**

(*b*) **14th day of the cycle.**

(*iii*) **Menstrual cycles are absent during pregnancy. Why?**

OR

Write the name of phases of Menstrual cycle?

the following questions a statement of assertion followed by a statement of reason is given. Choose correct answer out of the following choices.

(a) Assertion and reason both are correct statements and reason is correct explanation for assertion.

(b) Assertion and reason both are correct statements but reason is not correct explanation for assertion.

(c) Assertion is correct statement but reason is wrong statement.

(d) Assertion is wrong statement but reason is correct statement.

1. **Assertion :** The inner cell mass of blastocyst gets attached to the endometrium during embryonic development in humans.
   Reason : The blastomeres in the blastocyst gets arranged into trophoblast and inner cell mass. ***[CBSE 2022 Term-1, (57/2/4)]***
2. **Assertion :** The uterus is shaped like an inverted pear.
   Reason : The inner glandular layer lining the uterine cavity is called as myometrium.
3. **Assertion :** The middle piece of the sperm is called its powerhouse.
   Reason : Numerous mitochondria in the middle piece produce energy for the movement of the tail.
4. **Assertion :** All sperms released at a time do not fertilise the ovum.
   Reason : Fertilisation occur only when ovum and sperm fuse at the ampullary-isthmic junction.
5. **Assertion :** The embryo with 8 to 16 blastomeres is called a morula.
   Reason : The morula continuously divides to transform into trophoblast.
6. **Assertion :** After implantation, finger-like projections appear on the trophoblast called chorionic villi.
   Reason : Chorionic villi are surrounded by the uterine tissue and the maternal blood.

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